

Case Study

An adult case of ileocaecal intussusception due to Meckel's Diverticulum with heterotopic pancreatic tissue

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ABSTRACT

Meckel's diverticulum is true congenital diverticula and is one of the most important causes of lower gastro intestinal bleeding in children. The estimated average incidence is 1.2% (Elsayes et al., 2007). In adults the diagnosis is usually made intra-operatively. Here we report a case of a 38-year old male presenting with symptoms of acute abdomen. Skiagram of the abdomen showed multiple air-fluid interfaces. Exploratory laparotomy was performed and a Meckel's diverticulum was seen in the distal ileum along with ileo-caecal intussusception. Subsequent histopathology showed heterotopic pancreatic tissue in an inflamed Meckel's diverticulum. Although heterotopic pancreatic tissue is related to various gastro-intestinal diseases and malformations in both humans and animals, it is rarely associated with Meckel's diverticulum. The case merits interest as it is unusual for Meckel's diverticulum to present as acute abdomen due to intussusception in an adult. Moreover, the presence of heterotopic pancreatic tissue in the diverticulum is even more atypical. To the best of our knowledge this is the first case of heterotopic pancreatic tissue causing intussusception in an adult patient reported from North India.

Keywords

Meckel's diverticulum, Adult, Heterotopic pancreas, Intussusception

Introduction

Meckel's diverticulum, a true congenital diverticulum is a small bulge in the small intestine present since birth. It is a vestigial remnant of vitelline duct (omphalomesenteric duct) present in 0.2–4% of the population with a male predominance (Elsayes et al., 2007). It is located on the anti-mesenteric border of the ileum 45–60 cm proximal to ileo-caecal valve and is usually 3–5cm long. It possesses all the three

layers of the intestinal wall and derives its blood supply from superior mesenteric artery which makes it vulnerable to infection and obstruction like appendix (Mortensen and Jones, 2008). Since the cells lining the vitelline duct are pluripotent, heterotopic gastric mucosa (50%), pancreatic mucosa (5%) and less commonly colonic mucosa may be encountered. Along with endometriosis and hepatobiliary tissue these

heterotopic mucosae are responsible for complications like haemorrhage, chronic peptic ulceration and perforation.

Case

A 38-year old male patient presented to the emergency department with complaints of inability to pass stools, rectal bleeding off and on, vomiting and distension of abdomen since 10 days. He complained of acute abdominal pain of 8 hours duration. On examination, the vitals were stable; the abdomen was tense, tender and distended with absence of hepatic dullness on percussion. Leucocytosis (TLC 29,000/cu.mm) with neutrophilia of 82% was encountered on haematological evaluation. X-ray abdomen revealed multiple air-fluid levels suggestive of acute intestinal obstruction. Upon emergency exploratory laparotomy for the same, Meckel's diverticulum was seen in the distal ileum measuring 4 x 1 x 1 cm, along with ileo-caecal intussusception (Figure 1). A segment of 32cm of ileum and 6cm of caecum was resected which included the telescoped intestinal segment as well as the diverticula. Histopathological examination revealed a true diverticula having all the three layers of intestine (i.e. mucosa, submucosa and muscularis propria) with ulceration, haemorrhage and inflammation in the intestinal mucosal epithelium. Serous acini and ducts of ectopic pancreatic tissue were also seen in the submucosa. There was no evidence of malignancy (Photomicrograph 1,2).

Discussion

Intussusception of the bowel is defined as the telescoping of a proximal segment of the gastro-intestinal tract within the lumen of the distal segment. This condition is frequent in children and presents with the classic triad of cramping abdominal pain,

bloody diarrhoea and a palpable tender mass. However, intussusception is an uncommon condition in adults which differs from childhood intussusceptions in its presentation, aetiology and treatment. In adults it is usually secondary to an organic lesion that may be malignant (Yalamarthi and Smith, 2005).

The incidence of intussusception attributed to an inversion of Meckel's diverticulum accounts for 4% of all cases presenting with intestinal obstruction due to intussusceptions.^[4] A study by Park and his colleagues showed 14% of patients of Meckel's Diverticulum to be having ectopic or heterotopic tissues (Park et al., 2005). Heterotopic pancreatic tissue which consists of normally differentiated pancreatic tissue without a real anatomic or vascular connection to the pancreas is seen in <5% of Meckel's diverticulum. It is solitary, asymptomatic and located submucosally in most instances. It may sometimes cause symptoms like inflammation, bleeding and malignant transformation. This heterotopic pancreatic tissue may act as the lead point causing intussusception. A study by Yamaguchi et al on 600 patients, 287 were asymptomatic, showed the following complication rates: obstruction, 36.5%, intussusceptions which often presents as obstruction, 13.7%, inflammation or diverticulitis and perforation, 12.7% and 7.3% respectively, haemorrhage 11.8%, neoplasm 3.2% and fistula 1.7% (Yamaguchi et al., 1978). The most common cause of obstruction was intussusception or invagination with Meckel's diverticulum being the lead point as was seen in our case.

With the frequent use of computed tomography (CT scan) in the evaluation of patients with abdominal pain, this condition may be diagnosed more reliably (Marinis et al., 2009; Steinwald et al., 2009). Treatment

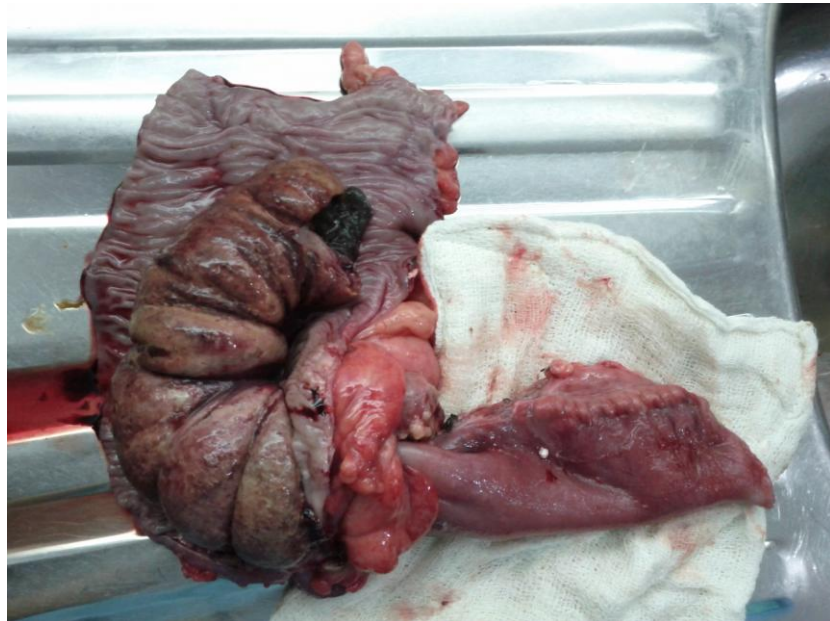
requires surgical resection of the involved bowel without attempted reduction.

Conclusion

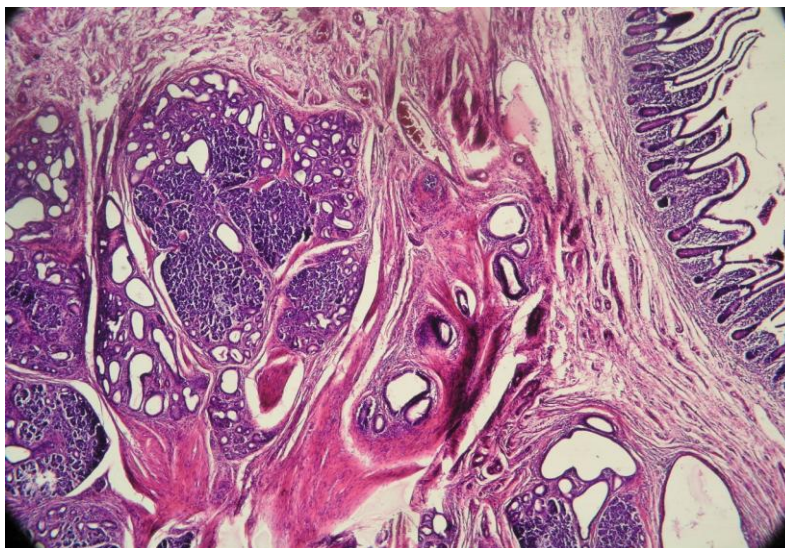
If Meckel's Diverticulum is found on exploratory laparotomy, accurate

exploration of rest of small bowel particularly ileum is recommended for the possibility of finding other heterotopic segments and thus avoiding secondary complications arising from it.

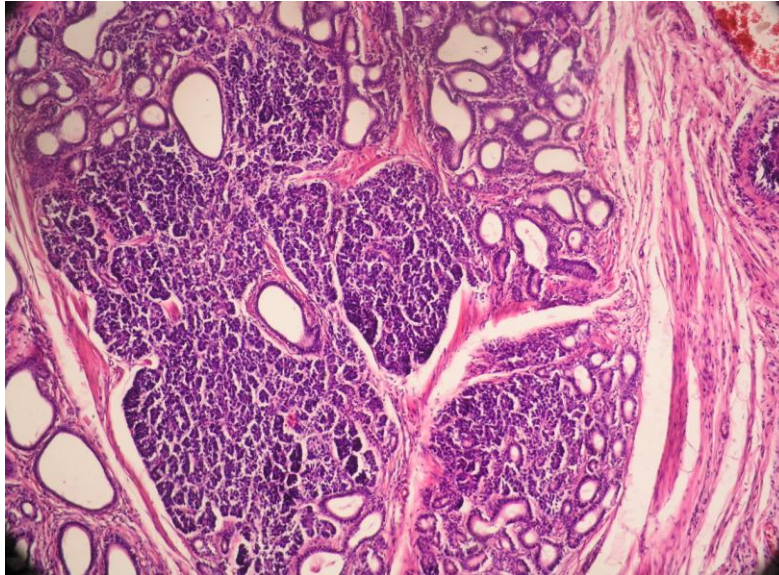
Figure.1 Resected intestine showing ileo-caecal intussusception



Photomicrograph1: 4x10X: H&E: Heterotopic pancreatic tissue in Meckel's diverticulum



Photomicrograph 2: 20x10X:H&E: Serous acini and ducts of heterotopic pancreatic tissue



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